

Ordnance Survey Ireland – Accuracy Statements for their large scale mapping

OSi have published a number of accuracy statements (table below) for their large scale mapping on which the new Property Registration Authority (PRA) digital mapping system is based. When published initially in 2005 (Greenway & Curran) the accuracies were quoted in RMSE format, which is the usual fashion internationally for publishing mapping accuracy and also complies with ISO data quality standard for geographic information (ISO, 2013).

Other elements and sub-elements of data quality as defined by the international standards organisation are not included in these statements. This is unusual, since the OSi mapping would be expected to score highly in some of these other aspects of data quality.

OSi Mapping Scales	OSi Accuracy Statement 2005	OSi Accuracy Statement 2006	OSi Accuracy Statement 2009	OSi Accuracy Statement 2010	OSi Accuracy Statement 2012	OSi Accuracy Statement 2013	OSi Accuracy Statement 2014	OSi Accuracy Statement 2015	International Norms for Map Accuracy = 0.2mm * map scale
1:1,000 of urban area	RMSE* = ±0.60m	89.9% within 1m and 98.3% within 2m for 5,196 points of hard detail tested	90.3% within 1m and 98.1% within 2m for 16,750 points of hard detail tested	91.0% within 1m and 98.7% within 2m for 19,920 points of hard detail tested	92.0% within 1m and 99% within 2m for 27,482 points of hard detail tested	93.0% within 1m and 99% within 2m for 32,165 points of hard detail tested	93.2% within 1m and 99.1% within 2m for 36,574 points of hard detail tested	93.2% within 1m and 99.1% within 2m for 36,929 points of hard detail tested	RMSE = ±0.20m
1:2,500 of sub-urban & peri-urban areas	RMSE = ±0.69m								RMSE = ±0.50m
1:5,000 of rural areas	RMSE = ±1.22m	96.3% within 2.5m and 100% within 5m for 2,267 points of hard detail tested	97.2% within 2.5m and 100% within 5m for 6,974 points of hard detail tested	97.4% within 2.5m and 99.9% within 5m for 8,579 points of hard detail tested	97.6% within 2.5m and 99.9% within 5m for 13,155 points of hard detail tested	97.6% within 2.5m and 99.9% within 5m for 14,999 points of hard detail tested	97.8% within 2.5m and 99.9% within 5m for 19,044 points of hard detail tested	97.8% within 2.5m and 99.9% within 5m for 19,618 points of hard detail tested	RMSE = ±1.00m

The original OSi Accuracy statement of 2005 highlighted the poor state of the urban mapping, at three times the international norm, whereas the 1:2,500 and the 1:5,000 scales were acceptably close to international norms. Consequently, when the statements were re-issued since 2006, the format of the accuracy statement was altered and urban mapping was combined with the sub-urban and peri-urban mapping, possibly to mask the poor state of the urban mapping. Additionally, the points chosen for this accuracy testing programme are identified as points of hard detail (buildings, walls, corners of kerbstones, etc) and not a random sample to also include soft detail (such as bushy hedgerows for boundary features) in order to provide an unbiased statistical result. Therefore, these results are statistically skewed, and if applied to the PRA use of OSi maps for associating PRA registered property boundaries with OSi topographic features, it should be done in the knowledge that the true data quality value is likely to be slightly worse than these stated values.

References:

- Greenway, I., and Curran, S., 2005, Ordnance Survey Ireland: Life after new Mapping, IRLOGI GIS Ireland Conference, Dublin, pp 1-13
- Greenway, I., 2006, Developing Ireland's National Mapping: A Progress Report, Ordnance Survey Ireland, Dublin, pp 1-9
- ISO (International Standards Organisation), 2013, Geographic Information – Data Quality - 19157, International Standards Organisation, Geneva, pp 1-155